

ABSTRACT

The present invention provides a family of peptides based upon the M2GlyR sequence. These peptides are derivatives of the M2GlyR sequence and can be modified at their ends to include a plurality of polar amino acid residues to enhance their solubility. Particularly preferred derivatives include portions of the M2GlyR sequence which are palindromic to another portion of the peptide or to the M2GlyR sequence itself. Preferably these portions are at least 7 amino acid residues in length. Peptides embraced by the present invention are characterized by having greater effects on the transepithelial electrical resistance of cells at lower concentrations. Peptides of the present invention have been shown to increase *I_{sc}* in MDCK epithelial cell monolayers with half maximal effects observed at or below 30 μ M, a nearly 10-fold improvement over any peptide previously characterized in the M2GlyR family.